

**IN THE CLAIMS**

1. (currently amended) An image rendering apparatus, comprising:

extracting means for extracting data representing a predetermined line part from data representing a three-dimensional image;

an image rendering means for rendering an the three-dimensional image;

an antialiased image forming means for forming an partially antialiased image portion by extracting data corresponding to a predetermined line part of the rendered image and for performing antialiasing processing on the extracted data; and

an overwriting means for overwriting the partially antialiased image portion onto a corresponding portion of the rendered image.

2. (currently amended) An image rendering apparatus according to claim 1, wherein said ~~antialiased image forming~~ extracting means extracts only data representing contour lines of the rendered three-dimensional image as the data representing the predetermined line part or extracts data representing the contour lines and contour candidates of the three-dimensional image thereof as the data representing the predetermined line part.

3. (currently amended) An image rendering apparatus according to claim 1, wherein said image rendering means renders the three-dimensional image according to using polygon information that represents the three-dimensional image, and wherein said ~~antialiased image forming~~ extracting means extracts the data representing the predetermined line part according to information that is included in by extracting a corresponding

~~part of the polygon information and that indicates what part of the rendered image the polygon information corresponds to.~~

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4. (currently amended) An image rendering apparatus according to claim 1, wherein the predetermined line part passes through a plurality of pixels, and said antialiased image forming means performs antialiasing processing by determining generates pixel values for each of the plurality of pixels as a function of an occupancy value of that pixel, through which an ideal line corresponding to the predetermined line part represented by the extracted data passes, according to the occupancy value of the pixel being based on a ratio of an area of an occupied portion of the pixel by the ideal line to an area of each of the pixels, the area of the occupied portion of the pixel being based on an area occupied by a portion of the predetermined line part that passes through the pixel when the predetermined line part is a straight line and being based on an area occupied by an ideal straight line segment which approximates the portion of the predetermined line part when the predetermined line part is curved.

5. (currently amended) An image rendering apparatus according to claim 4, wherein a the portion of the predetermined line part represented by the extracted data or the ideal straight line segment forms an angle with an X-axis, and said antialiased image forming means determines antialiases a range of pixels, on which antialiasing processing is performed, along a direction of the X-axis when the angle is equal to or larger than a predetermined value, and wherein said antialiased image forming means determines antialiases a range of pixels, on which antialiasing processing is performed, along a direction of a Y-axis that is orthogonal to the X-axis when the angle is smaller than the predetermined value.

6. (currently amended) An image rendering apparatus according to claim 4, wherein each of the plurality of pixels is divided into a matrix of sub-pixels, and said antialiased image forming means detects the ratio determines the area of the occupied portion of the pixel in units of sub-pixels areas into which one pixel is virtually divided.

7. (currently amended) An image rendering method, comprising ~~the steps of:~~

extracting data representing a predetermined line part from data representing a three-dimensional image;

rendering an the three-dimensional image;

forming an partially antialiased image portion by extracting data corresponding to a predetermined line part of the rendered image and performing antialiasing processing on the extracted data; and

overwriting the partially antialiased image portion onto a corresponding portion of the rendered image.

8. (currently amended) An image rendering method according to claim 7, wherein, said step of extracting the data representing the predetermined line part forming a partially antialiased image includes a ~~step of extracting only data representing contour lines of the rendered three-dimensional image or extracting data representing the contour lines and contour candidates of the three-dimensional image thereof as the predetermined line part.~~

9. (currently amended) An image rendering method according to claim 7, wherein said step of rendering an image includes a ~~step of rendering the three-dimensional image using according to polygon information that represents the three-~~

~~dimensional image, and wherein said step of forming a partially antialiased image includes a step of extracting the data representing the predetermined line part according to information that is included in includes extracting a corresponding part of the polygon information and that indicates what part of the rendered image the polygon information corresponds to.~~

10. (currently amended) An image rendering method according to claim 7, wherein the predetermined line part passes through a plurality of pixels, and said step of forming a the partially antialiased image portion includes a step of performing antialiasing processing by determining generating pixel values for each of the plurality of pixels as a function of an occupancy value of that pixel, through which an ideal line corresponding to the predetermined line part represented by the extracted data passes, according to the occupancy value of the pixel being based on a ratio of an area of an occupied portion of the pixel by the ideal line to an area of each of the pixels, the area of the occupied portion of the pixel being based on an area occupied by a portion of the predetermined line part that passes through the pixel when the predetermined line part is a straight line and being based on an area occupied by an ideal straight line segment which approximates the portion of the predetermined line part when the predetermined line part is curved.

11. (currently amended) An image rendering method according to claim 10, wherein a the portion of the predetermined line part represented by the extracted data or the ideal straight line segment forms an angle with an X-axis, and said step of forming a partially the antialiased image portion includes a step of determining antialiasing a range of pixels,

~~on which antialiasing processing is performed, along a direction of the X-axis when the angle is equal to or larger than a predetermined value, and a step of determining antialiasing a range of pixels, on which antialiasing processing is performed, along a direction of a Y-axis that is orthogonal to the X-axis when the angle is smaller than the predetermined value.~~

12. (currently amended) An image rendering method according to claim 10, wherein each of the plurality of pixels is divided into a matrix of sub-pixels, and said step of forming a partially the antialiased image portion includes a step of detecting the ratio determining the area of the occupied portion of the pixel in units of sub-pixels areas into which one pixel is virtually divided.

13. (currently amended) A computer-readable storage medium having a computer program stored therein for operating an apparatus to perform an image rendering method, said program method comprising the steps of:

extracting data representing a predetermined line part from data representing a three-dimensional image;

rendering an the three-dimensional image;

forming an partially antialiased image portion by extracting data corresponding to a predetermined line part of the rendered image and performing antialiasing processing on the extracted data; and

overwriting the partially antialiased image portion onto a corresponding portion of the rendered image.

14. (currently amended) A storage medium according to claim 13, wherein said step of extracting the data representing the predetermined line part forming a partially antialiased image includes a step of extracting only data representing

contour lines of the ~~rendered~~ three-dimensional image or extracting data representing the contour lines and contour candidates of the three-dimensional image ~~thereof as the predetermined line part.~~

15. (currently amended) A storage medium according to claim 13, wherein said step of rendering an image includes a ~~step of rendering the~~ three-dimensional image according to using polygon information that represents the three-dimensional image, and ~~wherein said step of forming a partially antialiased image includes a step of extracting the data representing the predetermined line part according to information that is included in~~ includes extracting a corresponding part of the polygon information and that indicates what part of the rendered image the polygon information corresponds to.

16. (currently amended) A storage medium according to claim 13, wherein the predetermined line part passes through a plurality of pixels, and said step of forming a partially the antialiased image portion includes a step of performing antialiasing processing by determining generating pixel values for each of the plurality of pixels as a function of an occupancy value of that pixel, through which an ideal line corresponding to the predetermined line part represented by the extracted data passes, according to the occupancy value of the pixel being based on a ratio of an area of an occupied portion of the pixel by the ideal line to an area of each of the pixels, the area of the occupied portion of the pixel being based on an area occupied by a portion of the predetermined line part that passes through the pixel when the predetermined line part is a straight line and being based on an area occupied by an ideal straight line segment which approximates the portion of the

predetermined line part when the predetermined line part is curved.

17. (currently amended) A storage medium according to claim 16, wherein ~~a~~ the portion of the predetermined line part represented by the extracted data or the ideal straight line segment forms an angle with an X-axis, and said step of forming ~~a partially the antialiased image portion~~ includes ~~a step of determining antialiasing a range of pixels, on which antialiasing processing is performed, along a direction of the X-axis when the angle is equal to or larger than a predetermined value, and a step of determining antialiasing a range of pixels, on which antialiasing processing is performed, along a direction of a Y-axis that is orthogonal to the X-axis when the angle is smaller than the predetermined value.~~

18. (currently amended) A storage medium according to claim 16, wherein each of the plurality of pixels is divided into a matrix of sub-pixels, and said step of forming a partially the antialiased image portion includes ~~a step of detecting the ratio determining the area of the occupied portion of the pixel in units of sub-pixels areas into which one pixel is virtually divided.~~

19. (currently amended) A server apparatus, comprising:

a computer-readable storage medium for storing a computer program for operating an apparatus to perform an image rendering method; and

~~a distributing means for distributing the computer program stored on the computer-readable storage medium;~~

wherein ~~said program including the steps of the method~~ includes:

extracting data representing a predetermined line part  
from data representing a three-dimensional image;

rendering an the three-dimensional image;

forming an partially-antialiased image portion by  
~~extracting data corresponding to a predetermined line part of~~  
~~the rendered image and performing antialiasing processing on the~~  
extracted data; and

overwriting the partially-antialiased image portion  
onto a corresponding portion of the rendered image.

20. (currently amended) A computer-readable storage medium having a computer program stored therein for operating an apparatus to perform an image rendering method~~thereon~~, said ~~computer program method comprising the steps of:~~

extracting performing antialiasing processing on at  
least a limited portion of data representing a rendered three-  
dimensional image, the limited portion including data  
representing a predetermined line part of the rendered three-  
dimensional image;

rendering the three-dimensional image;

forming an antialiased image portion by antialiasing  
the extracted data; and

overwriting an image of the antialiased limited image  
portion onto a corresponding portion of the rendered image.

21. (currently amended) A ~~The~~ computer-readable storage medium ~~of~~ according to claim 20, wherein the predetermined line part includes at least a contour of the rendered three-dimensional image.

<sup>23</sup>  
22.-~~28~~. (cancelled).

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<sup>24</sup>  
~~29~~. (new) An image rendering apparatus according to claim 1, wherein the predetermined line part represents a visually important portion of the three-dimensional image.

<sup>25</sup>  
~~30~~. (new) An image rendering method according to claim 7, wherein the predetermined line part represents a visually important portion of the three-dimensional image.

<sup>26</sup>  
~~31~~. (new) A storage medium according to claim 13, wherein the predetermined line part represents a visually important portion of the three-dimensional image.

<sup>27</sup>  
~~32~~. (new) A storage medium according to claim 20, wherein the portion of data represents a visually important portion of the three-dimensional image.

*all*  
<sup>28</sup>  
~~33~~. (new) An image rendering apparatus, comprising:

extracting means for extracting a portion of data representing a three-dimensional image, the portion including data representing a predetermined line part of the three-dimensional image;

rendering means for rendering the three-dimensional image;

antialiased image forming means for forming an antialiased image portion by antialiasing the extracted data; and

overwriting means for overwriting the antialiased image portion onto a corresponding portion of the rendered image.

<sup>29</sup>  
~~34~~. (new) An image rendering apparatus according to claim 34, wherein the predetermined line part includes at least a contour of the three-dimensional image.

<sup>30</sup>  
<sup>29</sup>  
~~35~~. (new) An image rendering apparatus according to claim ~~34~~, wherein the portion of data represents a visually important portion of the three-dimensional image.

<sup>31</sup>  
~~36~~. (new) An image rendering method, comprising:  
extracting a portion of data representing a three-dimensional image, the portion including data representing a predetermined line part of the three-dimensional image;  
rendering the three-dimensional image;  
forming an antialiased image portion by antialiasing the extracted data; and  
overwriting the antialiased image portion onto a corresponding portion of the rendered image.

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<sup>31</sup> ~~37~~. (new) An image rendering method according claim ~~36~~, wherein the predetermined line part includes at least a contour of the three-dimensional image.

<sup>33</sup>  
<sup>31</sup> ~~38~~. (new) An image rendering method according to claim ~~36~~, wherein the portion of data represents a visually important portion of the three-dimensional image.